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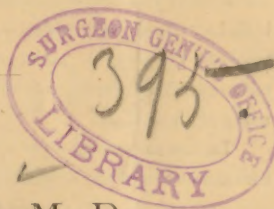
A REVIEW

OF THE MOST IMPORTANT

Advances in Surgery, Medicine
and Pharmacy in the Last
Forty Years.

— BY —

C. W. MOORE, M. D.,
SAN FRANCISCO.



Reprint from the "Pacific Record of Medicine and Surgery," July 15, 1887.

SAN FRANCISCO, CAL.:
PACIFIC RECORD OF MEDICINE AND SURGERY,
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1887.

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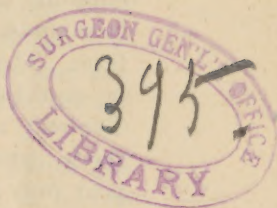
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Forty years ago we commenced the practice of medicine, and it seems fit and proper to review the many changes that have taken place in the opinions and practice of our art. Yet, it is impossible, in the scope of so brief an article, to do more than touch upon the vast improvements that have been made in the last forty years, in medicine, surgery and pharmacy. The revolution in medicine within that time is in a great measure due to the labors of Laennec, Broussais, Graves, Stokes, Claude Bernard, Brown Sequard, and others, who have thrown a flood of light on the diagnosis of the most obscure affections with which we are called upon to deal.

The labors of modern pathologists have done much to remove the great reproach of the art—its uncertainty. The investigations of Pasteur, Koch, Cohn, Tyndal and others as to special causes which give



genesis to disease, has suddenly awakened the scientific world from its apathy. In Germany the life history of bacteria and allied organisms has been carefully examined by Kuhn and Fokka in relation to wounds, and by Eberth in their relation to typhoid fever. There is no longer question of the spontaneous, or so-called antochthonous origin of infection. Typhoid and typhus fevers, dysentery, and diphtheria, pyæmia, erysipelas, and puerperal fever appear only at times when lurking germs and spores from previous cases, or *chemical combination of the elements necessary for their genesis*, find favorable conditions for development, or after fresh importations of the disease. The introduction into the blood of a specific germ begets the specific disease. Dr. Arnould, in a paper on the "Etiology and Prophylaxis of Typhoid Fever," says specific disease is synonymous with germ disease.

The discoveries of the different and numerous seats of morbid action led directly to the study of the symptoms of these lesions, and of those physical phenomena which resulted from, and accompanied them, and thus has the science of diagnosis been placed on such a sure basis that time, with its mutations, can never shake it. Observations of Laveran connect malarial fevers with an organism of considerable complexity, influenced by the specific therapeutic agents in a manner that affords an explanation of their effect on the disease, more complete, perhaps, than has been given of the mechanism of any other acute malady.

From the time of Hippocrates until recently the treatment of effusions into the pleural cavity has been among the "opprobria medicorum." The unfortunate subjects were bled or salivated, or often blistered, generally plied with diuretics, and by

cautious practitioners treated on the expectant plan. In many cases, perhaps the majority, the powers of nature were equal to the demand made upon her and the liquid absorbed. In many cases, however, these fortunate results did not occur, and the effusion went on increasing until the patient was killed by mechanical pressure or by the development of some disease that the pressure induced.

Dr. Bowditch, of Boston, was impressed with the notion that it would be possible and safe to relieve these cases by drawing the fluid off. He made several attempts to do this by means of incisions into the pleural cavity. The results were not satisfactory. Dr. Wyman, of Cambridge, unaware of Dr. Bowditch's views, entertained similar notions, and successfully tapped a patient by means of an exploring trocar and canula with suction pump attached. In 1850, Dr. Bowditch, aided by Dr. Wyman, repeated the operation with equal success upon another patient. Since that time he has operated upon patients of all ages and both sexes, and with almost every species of complications, and has never seen any permanent evil results. Thoracentesis is now regarded both in Europe and America as a safe, legitimate and necessary procedure, when withdrawal of fluid from the chest is indicated.

The diagnosis of chest affections is well nigh perfect, and observations on the temperature have aided their differential diagnosis.

The subject of tuberculosis has engaged the widest attention. The impetus to this study was given by Koch's now famous discovery of the bacillus tuberculosis. This organism has been detected, not only in phthysical sputa and tubercular lungs, but in tubercular lesions of all kinds and in the urine in renal phthisis. The infective production of tuberculosis has been proved experimentally by Tappeiner and Bollinger and the theory boldly applied to the origin of tubercular disease in the human subject by Cohnheim and Creighton. Dr. Thomson, in his work on the "Histo-Chemistry and Pathogeny of Tubercle," advanced the

views that specific micrococci would produce tubercle, first gray, then yellow, and that these micro-zymes were buried in the ruins they produced. If the bacillus is the cause of the disease, then the indications are toward the extermination of this parasite. If we believe, with Dr. Schnyder and many others, that it is merely a concomitant—a scavenger—of the disease, then we should trace the latter to other causes, and modify our treatment accordingly.

In 1855, Dr. J. M. Da Costa, of Philadelphia, published a memoir on the pathological anatomy of pneumonia. In 1859 he called attention to the occurrence of a blowing sound in the pulmonary artery, associated with affections of the lungs; on the sounds of the artery in health, and the effect on them and on the heart in the act of respiration.

The profession are indebted to Dr. Austin Flint, of New York, for calling their attention to the importance of distinguishing the variation of pitch elicited by percussion, as an aid in ascertaining the condition of the organs of the chest. We are again indebted to Dr. Flint for enabling us to solve the difficulty of distinguishing between the solidification of pneumonia and the effusion of pleurisy.

Antiseptic inhalations in cases of pulmonary diseases have been much spoken of and a good deal written about. Their employment came, no doubt from the parasitic doctrine of the nature of phthisis.

To Laennec we owe the origin of cardiac diagnosis, while to Haube is mainly due the knowledge of the relations which may exist between renal and cardiac disease. The diagnosis of valvular disease has become very exact, more especially when we take into account the value of murmurs, coupled with a careful examination of the symptoms and physical signs indicative of the altered vital and physical state of the heart.

Dr. Alfred Stille, of Philadelphia, was among the first, if not the first, to call attention in print to a condition of the heart observed among soldiers as the result of prolonged and violent exertion, and now known as irritable heart. Dr. Henry Hartshorne, in the same year, more fully described the affection in a

paper which he read before the College of Physicians of Philadelphia.

Dr. J. M. Da Costa, in a communication to the Surgeon General's Office, called attention to this same cardiac malady. He also published a careful and elaborate clinical study of 300 cases, in which he showed irritable heart resulted from exhausting diseases, such as fevers and diarrhœa, and from strains and blows, as well as muscular exhaustion, and further traced the connection between functional heart disorder and organic change. In 1874 he called attention to the same sequelæ in civil practice.

In 1851 Dr. Arthur Leared, of London, exhibited at the great exhibition of London, a double binaural stethoscope which he was the first to devise.

Foremost among the subjects to which pathological inquiry has been directed of late years, stands cholera. A great deal turns upon the question whether the disease can be communicated by experimental inoculation with the culture of the bacillus. On this subject we have the conflicting statements of Koch, Klein, Gibbes, Van Ermengen, Watson, Cheyne and others.

Preventive inoculation of yellow fever has met with some success, and the Government of Mexico has recommended the practice. We have Pasteur's research into the nature of hydrophobia, and the practice of protective inoculation based on that research.

Dr. Hammond has given an account of his own original experiments upon the state of intracranial circulation during sleep, and presents the whole subject of sleep and its derangements in a clear and satisfactory manner.

A great advance has been made in the localization of cerebral and spinal disease, although an enormous field is still open for the observation of this class of disease. While we might be able to localize the origin of a right or left hemiplegia, and the symptomatic value which may attach respectively to convulsive affections, aphasia and chorea, still cases will present themselves in which to draw the line between organic and functional nervous affections.

The systematic examination of the urine and discovery of the nature of Bright's disease, also the intro-

duction of auscultation belongs to the present period. In 1854 Wood, of Edinburgh, introduced the hypodermic syringe, which has been of immense value in the treatment of painful affections.

Among the positive acquisitions to medicine was the discovery of anæsthetics, and the utility of anæsthesia for relief of pain in medicine and surgery. Men of all medical schools are united as to the beneficial effects of anæsthetics in extreme pain and in dangerous convulsive affections.

No region is now sacred to the surgeon or considered necessarily beyond the scope of practical surgery. The surgery of the present day boasts most of its triumphs in the successful interference with the important viscera and serous cavities. It is no longer necessary to write of antiseptic surgery as on its trial, for it is now universally admitted that all surgery to be successful must be antiseptic, and on all sides precautions are taken to observe cleanliness in all surgical procedures. Almost incalculable good has been achieved by carbolic acid; it has proved itself thoroughly efficient, as a rule harmless, easy of manipulation, cheap, and has rendered antiseptic surgery possible years before it otherwise would have been. Carbolic acid has not failed, but something better has been found. The spray has been in part superseded by corrosive sublimate irrigation of wounds. The carbolic gauze has been replaced by iodoform wool, sal-almenbroth wool and others. Iodoform, as a dressing for recent wounds, has come into general use and has been attended with excellent results.

In 1852 a flood of light was thrown into dark places by an article from the pen of J. Marion Sims, upon vesico vaginal fistula, in which he introduced a speculum which developed a new principle of examination of the uterus and vagina. In 1857 Sims made known his operation for narrowing the vagina for the cure of prolapsus uteri. He was anticipated in this by Diefenbach, Heming, and other Europeans, but his method was an improvement over the others. Huguier, considering prolapsus uteri caused by hypertrophic elongation of the cervix proposed to

cure it by amputation, and first performed this operation in 1848.

Marshall Hall was the first to perform elytrorrhaphy. He removed an elliptical piece of mucous membrane from the anterior vaginal wall and united edges with quilled sutures. He was followed by Simon with his kolporrhaphy, Hegar and Kaltenbach with their kolpoperineorrhaphy and the perineoplasty of Bischoff—all seeking to permanently narrow the vagina, change its axis forward and upward, and strengthen the recto-vaginal septum. These were followed in 1876 by Le Fort's operation of forming a double vagina. In 1861 both Bozeman and Emmet created an artificial vesico vaginal fistula for the cure of chronic cystitis. In 1870 Gaillard Thomas performed the operation of vaginal ovariectomy, removing an ovarian cyst the size of a large orange through an opening made through the vagina and Douglass pouch. This was the first time this procedure was ever advised or practiced for this purpose. In the autumn of 1862, Dr. Thomas A. Emmet first proposed surgical treatment for laceration of cervix uteri. In 1862 Dr. Robert Battey, of Georgia, published an essay advocating extirpation of the ovaries, thus inducing a premature menopause as an effectual remedy of certain otherwise incurable maladies.

Lawson Tait has recently reported an unbroken list of successes in ovariectomy extending over many months. He has also recorded the result of a large experience in cholecystotomy.

Mr. Godlee in 1885 reported a successful case of abdominal section for acute suppuration set up by perforation of the vermiform appendix.

Until within a few years extroversion and exstrophy of the bladder were thought to be beyond the reach of the surgeon. The utmost that was attempted for patients thus affected, was to supply a mechanical apparatus. Endeavors have now been made to remedy or alleviate, by operative interference, and in many instances with very gratifying success.

Re-section of the large intestine for carcinoma has been successfully performed in Europe and also in this country. Active surgical interference has been

instituted in injuries of the abdomen, especially in the case of gunshot wounds, where there is the slightest suspicion of injury of the intestine.

Digital divulsion of the pylorus was first performed on Sept. 14, 1884, by Professor Loreta at Bologna, and the same operator has performed rapid instrumental divulsion of the cardia.

Incision of the lung is practiced for abscess, gangrene and hydrated cysts.

New methods of performing Cæsarean section have been devised. This operation has been more successful in the hands of European surgeons than in those of the American.

The first operation performed on account of acute peritonitis, was proposed and executed by Dr. Wiltshire in 1868. Mr. Lawson Tait thirteen years ago followed Wiltshire's example. Since that time, he affirms he has never allowed a patient to die of peritonitis without opening the abdomen, whenever permitted. He has performed abdominal section forty-four times for peritonitis, and been completely successful in forty-one cases.

Cysts and abscesses in the liver have been freely incised and drained, and large portions of the stomach and intestines have been excised for cancerous growths and the whole uterus has been removed for cancer of the cervix.

It has also been shown that pieces of sponge can be grafted upon large wounds, and that this greatly facilitates the filling up of cavities by forming a porous support for the granulation of tissue.

It has been shown that bone can be transplanted and will not only live but excite the formation of a lost bone, as has been proved in the cases of a humerus and a tibia. We have Lister's operative treatment of fracture of the patella, which was first performed in 1877. He opened the knee and sewed together the fragments of a recently fractured patella, obtaining a firm union and a useful leg. Since then others have followed his example in such numbers that this method is now well established. Operations upon the bones for the correction of rickety deformities have become common.

Renal tumors and calculi have been successfully removed. Nephrotomy, the name by which the operation of cutting down upon the kidney from the loin is known, has been practiced by Barker, May, Morris and Puzey, whilst removal of the entire kidney—nephrectomy—has been performed by Simon, Czerney, Barker, Thornton and Lucas. The feasibility of each of these operations is established.

Deep-seated tumors of the neck may be removed with impunity, now that the principles of asepticism are so well understood. Mr. Arthur Baker reports four cases, in which he removed tumors lying beneath the sterno-cleido-mastoid muscle, requiring deep dissection. The wounds were dried and dusted with iodoform and a drainage tube inserted. The skin was united with silk sutures. Pads of "salicylic wool" were applied, and covered with other wool in such quantity that considerable pressure could be made upon the cavity by means of bandages.

Great results have been obtained in overcoming deformities of the spine by means of the plaster jacket, the product of one of America's greatest specialists (Sayre), and from the same source the ingenious appliances for overcoming diseases of joints and limb deformities.

The first successful cure of aneurism by digital compression occurred in 1847, in the practice of the late Prof. Knight, of New Haven. The case was one of popliteal aneurism. Until a very recent period, the idea was very common among surgeons, even the most enlightened and experienced, that the ligation of a vein, especially a large one, was almost universally productive of very grave consequences, occasionally followed by death. How utterly unfounded this opinion is, has been abundantly proved by the able and exhaustive statistical paper of Dr. S. W. Gross, of Philadelphia, published in the January and April numbers of the *American Journal of the Medical Sciences* for 1867.

Aneurisms in the extremities have been treated by complete temporary arrest of circulation, with exsanguination of the limb by means of Esmarch's elastic bandage; by compression, both digital and mechani-

cal, by ligature, with and without antiseptic precautions, and by flexion. Several cases of cure of innominate aneurisms by distal ligature have been recorded.

Surgery has been greatly aided and relief given in conditions which heretofore have been considered as inevitably fatal, by the discovery by Brown-Sequard and his co-laborers of localized points in the brain, their offices, and the manner in which they act under injury and disease. Especially is this the case in certain conditions of bone depression, in penetrating wounds, in effusions, in the formation of abscesses, and above all, in determining the location, through bodily manifestation of brain tumors, thus enabling the surgeon, who is a practical physiologist to determine and eradicate the mischievous causes.

By the aid of anæsthetics, brain surgery has been rendered more easy; the trephine has been brought into more general use, tumors of the brain removed, pus cavities opened, serum let out, and bone elevation rendered less difficult; in all the departments of surgery where minuteness of observation, skill and care in operating were required, they have been found indispensable.

The reduction of dislocations has been greatly simplified, chiefly through the influence of American surgeons. The cumbersome apparatus, formerly so much in vogue, and deemed in many cases, indispensable to success, have become obsolete instruments. Science and common sense have taken the place of awkward and dangerous mechanical appliances, and the whole process has been rendered so simple that one is astonished that the revelation was so long in coming. Vast changes have also taken place in the treatment of the diseases and injuries of the joints.

Nerve-stretching, although its physiological aspects are but imperfectly understood, has taken rank in surgery beside the section and re-section of nerves. It has proved particularly useful in contractures and peripheral paralyses, especially of traumatic origin, and in the anæsthesia of leprosy. Excision of nerves for the cure of neuralgia and other affections, has of late been carried to a very great extent, in one case

embracing the removal of a section of the entire brachial plexus. The superior maxillary nerve has been cut out beyond the ganglion of Meckel. Dr. Carnochan, of New York, having led the way in this bold procedure. In a remarkable case of vaginal neuralgia of twelve years' duration, in the care of Dr. T. G. Morton of Philadelphia, a speedy and permanent cure was effected by excision of the perineal nerve. The nerve was exquisitely tender, and rolled under the finger like a cord.

The operation of incising the abdomen for the purpose of evacuating the matter in perityphilitic abscess was first performed in 1848, by Mr. Hancock of London. There has also been successful excision of the tongue for epithelioma.

To Bigelow we are indebted for the practical conception for crushing stone and washing out the bladder. For all cases in which the crushing operation can not be employed, the supra pubic operation for stone in the bladder is now largely resorted to.

About twenty years ago, Reizmund demonstrated the fact that cauterization of the point of inoculation of syphilis, if done within three days from the time of inoculation, was competent in many cases to prevent the development of the malady. A step further in this direction is the prophylactic destruction, or excision of the initial lesion itself. Many of the younger German writers, convinced that the primary lesion of syphilis is entirely local in its nature, insist upon the possibility of arresting the progress of such infection, by early and thorough excision of the initial lesion before the development of inguinal buboes. The only practical outcome of the discussion, thus far, has been to show that excision of the initial lesion is not followed by any bad consequences, when thoroughly done, and with strict attention to antiseptic details.

For the treatment of fistula in ano, we have had introduced the elastic ligature and the thermo-cautery of Paquelin. Speaking of the thermo-cautery, Allingham says: "By its judicious application you can stimulate the muscular fibres and cause them to contract, and by diminishing the circumference of the anus obtain action of the fibres which are left." For

the treatment of internal hemorrhoids, we have Verneuil's method of dilatation of the sphincters, the employment of the Paquelin cautery, the operation known as clamp and cautery operation, the treatment by crushing, and by ligature. Allingham states that he considers ligature combined with incision, the safest, easiest and best operation for the great majority of cases of hemorrhoids.

Pharmacy in the present day embraces so many sciences and has become so complicated from the discoveries which have recently been made, especially in chemistry, that a complete knowledge of the subject can only be acquired by those who devote their exclusive attention to the pursuit.

Magendie laid the foundation stone of modern pharmacology and left behind him works which may still serve as a model for modern investigators. His plan was to first prevent the drug which he wished to examine from reaching the part of the body on which it was supposed to act and observe whether its action was abolished by this procedure; secondly in applying the drugs to that part only and noticing whether it still excited the same action as when applied to the whole body. The first poison experimented upon was the upas. The second example in pharmacological research is the investigation of the curare poison by Claude Bernard a pupil of Magendie.

The experimental method has done much for medicine. We have new remedies. We are taught how to use our old ones. We learn what to do and what to avoid. For example we learn that the action of *casea* on the heart and vessels indicate it as a useful remedy in defective circulation. At the same time it may disturb digestion—therefore it should not be carelessly given.

The recognition of *digitalis* as a cardiac stimulant, the result of experiment, has made practitioners employ it more generally in cardiac debility. It has been shown that labored respiration may be the most urgent symptom in mitral disease, the heart and not the lungs is at fault. Or we may have the heart palpitating and pulse irregular or intermittent, when the disorder is really in the stomach. Modern investi-

gation has taught us to remove the irritation of the stomach. If we cannot do this we may prevent its effect in two ways. As the action is reflex and is produced through the vagi, we may stop it by destroying their power. We are taught we must use a drug that will lessen reflex action generally. Such as bromide of potassium, opium or chloral. Or if long intermissions should threaten danger we can avert it by the free use of atropia. This drug completely paralyses the ends of the vagus in the heart. It also paralyses the sensory nerves of the heart and is thus useful where the organ is irritable or hyperaesthetic.

In angina as the vessels dilate and the pressure falls, the heart beats more slowly instead of more quickly. As the pressure rises, during the attack of angina, severe pain comes on and when pressure falls the pain disappears. It was therefore natural to look upon pressure as the cause of pain. Experiments upon nitrite of amyl have shown it to possess the very power desired. It has also been used with success in some forms of headache and it has lately been found to be a physiological antidote to cocaine poisoning. Dr. Crichton Brown has succeeded in epilepsy by giving it before the fit comes on. Dr. Begbie has, however, proved bromide of potassium the remedy *par-excellence*. Experiment has shown the bromides lessen reflex action generally. Bromide is not an astringent, yet it has been proved that it will check diarrhoea which depends upon reflex irritation.

Various researches have shown that nerve centres may be affected by drugs independently of the circulation. The experiments of Hammond have shown that in the sleep produced by small doses of opium, the brain is anæmic, but after large doses the anæmic gives place to congestion, slow circulation to stagnation—thus the sleep passed into coma.

If the patient constantly falls asleep while standing, we now know that the vessels are probably flaccid. In such a case we have learned that digitalis will probably be useful by giving contractile power to the vessels and chloral injurious by weakening them. But if when the tight arteries and powerful heart seem

to be driving the blood rapidly through the brain, we have recourse to chloral for its weakening action.

Claude Bernard has shown that we can act not only on the nerve centres but on peripheral nerves by our drugs.

Pharmacological experiment has shown us that carbonate of ammonia is useful in the cough of bronchitis because it stimulates the respiratory centre and thus gives us a reason for our treatment. That atropia combines two qualities likely to make it useful in the cough of debility. It stimulates the respiratory centre, but at the same time lessens the irritability of the sensory nerve of the lungs. That hyosciamus has an action almost similar. Heidenhain has shown that atropia by paralysing the ends of the secreting nerves in the Submaxillary glands, so that no irritation would excite the slightest flow has given us a powerful remedy in mercurial salivation.

By means of gastric fistula established experimentally in animals and sometimes occurring accidentally in man, we have become acquainted with the chemical processes which go on in the stomach, and the agents which originate them, and have been able to see what drugs do inside the body.

From Bernard's experiments we learn that weak alkalies, as bicarbonate of soda, given before meals are useful in atonic dyspepsia.

In the intestine we can no longer watch so readily as in the stomach what our drugs are doing, but experiments are teaching us something about their action there. They have taught us that acids applied to the mouth of the bile duct stimulates the discharge of bile from the gall bladder.

Rutherford has shown that phodophyllin, rhubarb, aloes, and colchicum increase the secretion of the bile.

Lussane, Schiff and Heidenhain found that the liver not only formed new bile, but again secretes the old bile which has been absorbed from the intestines, thus the benefit derived from a dose of calomel, blue pill, or other purgatives, is found to be due to its action on the intestine, enabling it to carry off the effete matter.

We have learned that the production of lactic acid,

by muscular decomposition, can be arrested by salicylic acid and its compounds. This useful drug we owe entirely to pharmacological research.

The specific action of ergot in increasing irritability and thus toning the unstriped muscular fibre, rendering it useful in hemorrhages and as a parturifacient.

The remarkable action of jaborandi in promoting the action of the perspiratory glands which renders it one of the most speedy and certain of diaphoretics.

We have learned of the specific effect of nux vomica on the spinal cord exalting its irritability, thus enabling us to utilize it in cases of spinal exhaustion and debility.

Among the positive acquisitions to science is the discovery of anaesthetics and the utility of anaesthesia in medicine and surgery. These remedies act by suspending vital movements in the nerve centres of special sense and consciousness. They abolish sensibility of every kind and all vital irritability. Their adequacy for producing complete insensibility was settled only by repeated observations, with varying results but gradually accumulating evidence.

The utility of anaesthetics in extreme pain and in dangerous convulsive affections is acknowledged by men of all medical schools as well as its beneficial effects in the relief of pain in surgery.

In 1884 we had the announcement made of the discovery of a new local anaesthetic, cocaine. Experience seems to assign to cocaine the highest place in the class of local anæsthetics. The value of cocaine in opthalmic, aural, laryngeal, nasal and oral surgery seems already to have been placed on a sure basis.

According to the experiments of Schultz, poisons as atrophine, cocaine, nicotine, pilocarpine and chloral are found to retard or inhibit the movements of the gastric contents towards the pylorus. Other drugs render the movements atypical and more numerous and rapid, as strychnine, minute doses of nicotine, caffeine, veratrine, emetine, apomorphine and tartar emetic. Others again do not directly hinder the movements but produce the result that the muscular coat once retracted, becomes relaxed, either not at all

or only very slowly; these are muscarine, pysostigmine, digitaline helleborine and scillaine.

Antipyrin has been found to be of great service in lowering temperature in typhoid fever, tubercular meningitis, and in miliary tuberculosis. In pneumonia, antipyrin in spite of its power of reducing fever has no beneficial effect on the course of the disease.

Scopoleine a new mydriatic has been introduced by Pierd Hony. Its action is described as being very rapid. It has also been found to be exempt from the discomforts observed in the exhibition of atropine.

A new hypnotic has been found in urethan. Chemically it is an ethyllic ether of carbonic acid, and when pure consists of white rhomboidal crystals which are readily soluble in water. It produces a deep dreamless natural sleep from which the individual awakens refreshed and without unpleasant sensations. It does not appear to have any special action on the circulatory, respiratory or excretory system. The effect of the drug seems to be exclusively upon the higher cerebral centers.

Nitro-glycerine has been recognized as a valuable agent in the treatment of angina pectoris and other spasmodic affections. It has also been employed in the treatment of nephritis.

Considerable advances have been made in the supply of new forms of food easy of digestion. The various emulsions of cod-liver oils, meat peptones, pancreatinized foods and the like, have proved useful to the practitioners in the treatment of disease. The elegant forms of various drugs, the excellent concentrated tinctures of uniform dose, the various compressed tablets, the parvules, granules and capsules now so largely prescribed, all play an important part in practice rendering doctors and their physic more acceptable, or less objectionable to their patients.

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EXT. HYOSCYAMI	- - -	$\frac{1}{4}$ GR.
EXT. JALAPAE	- - -	$\frac{3}{4}$ GR.
LEPTANDRIN	- - -	$\frac{1}{2}$ GR.
OL. MENTH. PIP.	- - -	

DOSE—TWO TO FOUR.

PREPARED BY

REDINGTON & COMPANY,

Manufacturing Chemists,

SAN FRANCISCO.

AWARD



MEDAL.

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